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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,797	10/16/2003	Sung-Hoon Lee	030681-575	5138

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EXAMINER

BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/685,797		LEE ET AL.	
	Examiner		Art Unit	
	Bruce F. Bell		1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 13-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 13-20, 22, 24 and 26 is/are rejected.
- 7) ☒ Claim(s) 21, 23 and 25 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: ____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 13, 15-17, 19, 20, 22, 24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al (4,716,087).

Ito et al is as set forth in the previous office action.

Applicants argue that the Ito et al patent fails to disclose or suggest the alloys recited in claim 1, but rather discloses a platinum-copper alloy.

The examiner would like to point out that platinum-copper alloy is one of the suggested alloys as set forth in instant claim 1. The Ito et al patent does not lead one towards or away from the applicant's instant invention as presented. Since the patent office is not equipped to do testing, it is up to applicant's to show that their instant platinum-copper alloy is different than that of the prior art platinum-copper alloy and that the prior art alloy does not have the property set forth in the instant claim 1. Therefore, the rejection is deemed proper until such time as comparative data is received showing the prior art alloy to the instant invention alloy. Applicant is further reminded that the examiner is not required to find each and everyone of the alloys as set forth in the instant claim since the term "or" is used. Further, in the any subsequent office action a species election may be

imposed, since applicants are claiming the catalyst particle which has a diverse searching area that is extensive in nature.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 4, 13, 20, 22, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Guruswamy et al (US 2006/0054246).

Guruswamy et al disclose a $\text{Pd}_x\text{Ni}_{1-x}$ and $\text{Pd}_x\text{Co}_{1-x}$ alloys that can be used in hydrogen storage and catalytic systems. The alloy can be used in controlling or programming the solubility and diffusion behavior in an alloy. See paragraph [0003]. The alloy also shows controlled solubility/diffusion/leakage of Hydrogen in Ni-Pd based alloys. See paragraph [0020].

The prior art of Guruswamy et al anticipates the applicants instant claims as presented with respect to the disclosure to Guruswamy set forth above. Applicants instant claims as presented set forth limitations with respect to the hydrogen binding ability. Guruswamy discloses that this type of alloy is known and that the hydrogen leakage is controlled through the alloy. It appears that unless comparative results between the Guruswamy et al alloy and that of the applicant's instant alloy are shown to

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ascertain the differences with respect to the instant alloy, that it would appear that the Guruswamy et al alloy will have the same functionality as that of the instant invention and therefore would be the same alloy.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language:

6. Claims 1, 2, 4, 13, 16, 17, 20, 22, 24, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Ihringer et al (US2005/0048356).

Ihringer et al disclose a NiCu alloy that is on a ceramic support and used in a SOFC. See paragraphs [0050 and 0051] and abstract.

The prior art of Ihringer et al anticipates the applicant's instant invention as set forth above with respect to the instant claims as presented. It appears that without comparative results that the above alloy used in the SOFC would have the same functionality as that of the applicants instant alloy as set forth in the instant claims.

Since the patent office does not have a way to perform experiments to prove otherwise, it is up to the applicant's to provide such comparative data proving that the prior art alloy and that of the instant invention are different, since the prior art does not lead one toward or away from the instant invention. Applicant's are requested to provide data

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showing that the prior art alloy does not have a hydrogen and oxygen binding energy as set forth in the instant claims in order to overcome the rejection set forth above.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-4, 13-20, 22, 24, 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Hampton-Smith (US 20040038808).

Hampton-Smith disclose alloys for use in a proton exchange membrane fuel cell, wherein a PdZn alloy that includes nanoparticles including carbon particles is shown as a catalyst material. See paragraph [0295].

The prior art of Hampton-Smith anticipates the applicants instant invention as set forth in the instant claims with respect to the disclosure set forth above. It appears that the above alloy would have the same properties as that of the instant invention alloy absent evidence to the contrary. It appears that the Hampton-Smith alloy neither leads one towards or away from the instant invention as set forth in the instant claims as that in order to overcome the rejection set forth above, it is suggested that applicants provide comparative results between the prior art allow and the instant invention alloy

showing that the prior art alloy does not have oxygen and hydrogen binding forces that are stronger or weaker than platinum, respectively.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claim 26 is rejected under 35 U.S.C. 102(b) as being anticipated by Auer et al (6165635).

Auer et al is as set forth in the previous office action.

The prior art of Auer et al anticipates the applicants instant invention as set forth in the previous office action. Auer et al teaches an alloy of platinum-rhodium-iron on an electrically conductive carbon support and is characterized in the average particle size of the catalyst being alloy particles of less than 10 nm. It appears that the prior art of Auer et al alloy would inherently have the properties of having the stronger and weaker hydrogen binding forces than platinum since the alloy has the same constituents as the applicant's instant alloy absent evidence to the contrary.

Allowable Subject Matter

11. Claims 21, 23 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 21, 23 and 25 are allowable over the prior art of record.

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13. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not teach and/or suggest one of the alloys as recited in instant claims 1, 4 or 16 wherein additional metals may be added to the alloy.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB
October 16, 2006


Bruce F. Bell
Primary Examiner
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